



Marketing Bulletin

DATE: May 20, 2003

TO: Affected Customers

FROM: Mark Stoner

RE: Product Termination

To all concerned parties,

This bulletin is to notify all customers of the termination of the following Ecliptek series effective May 14th, 2003:

Series	Description	Recommended Replacement
E11C1	Four Pad SMD PECL Oscillator, 5V	E11J1 or E11W1
E13C1	Four Pad SMD PECL Oscillator, 3.3V	E13J1 or E13W1
E11C2	Six Pad SMD PECL Oscillator, 5V	E11J2 or E11W2
E13C2	Six Pad SMD PECL Oscillator, 3.3V	E13J2 or E13W2
E31C2	Six Pad SMD PECL VCXO, 5V	E31J2 or E31W2
E32C2	Six Pad SMD PECL VCXO, 3.3V	E32J2 or E32W2

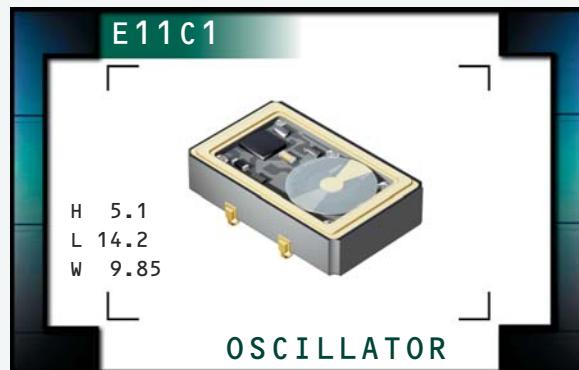
Because of the circumstances surrounding this termination, there will be no end-of-life policy exercised. The series will be terminated with no purchasing or lifetime buy window available. All of us at Ecliptek Corporation apologize for any inconvenience this may have caused and can assure you we are taking measures to insure this will not happen again in the future.

Best Regards,

Mark W. Stoner
Director of Marketing
Ecliptek Corporation

E11C1 Series

- PECL Output Oscillators
- 5.0V supply voltage
- 4 pad ceramic SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



NOTES

OBSOLETE

ELECTRICAL SPECIFICATIONS

Frequency Range	19.440MHz to 212.500MHz					
Operating Temperature Range	0°C to 70°C or -40°C to 85°C					
Storage Temperature Range	-55°C to 125°C					
Supply Voltage (V_{cc})	5.0V _{DC} ±5%					
Input Current	100mA Maximum					
Logic Type	100KH					
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum				
Output Voltage Logic High (V_{oh})	V_{cc} -1.025V _{DC} Minimum					
Output Voltage Logic Low (V_{ol})	V_{cc} -1.620V _{DC} Maximum					
Rise Time / Fall Time	20% to 80% of waveform	2 nSeconds Maximum				
Duty Cycle	at 50% of waveform	50 ±10(%) 50 ±5(%)				
Load Drive Capability	50 Ohms into V_{cc} -2.0V _{DC}					
Logic Control / Additional Output	No Connect, Enable/Disable, or Complementary Output					
Enable/Disable Input Voltage	V_{il} of V_{cc} -1.475V _{DC} Maximum No Connection V_{ih} of V_{cc} -1.165V _{DC} Minimum	Enables Output Enables Output Disables Output: Logic Low, Disables Complementary Output: Logic High				
Start Up Time	10 mSeconds Maximum					
RMS Phase Jitter	FJ = 12kHz to 20MHz	1 pSec Maximum				
MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E11C1	PACKAGE CERAMIC	VOLTAGE 5.0V	CLASS 0565	REV. DATE 10/02

PART NUMBERING GUIDE

E11C1 F 2 C - 155.520M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

C=±100ppm Maximum over 0°C to +70°C
 D=±50ppm Maximum over 0°C to +70°C
 E=±25ppm Maximum over 0°C to +70°C
 F=±20ppm Maximum over 0°C to +70°C
 G=±100ppm Maximum over -40°C to +85°C
 H=±50ppm Maximum over -40°C to +85°C

DUTY CYCLE

1=50% ±10%, 2=50% ±5%

AVAILABLE OPTIONS

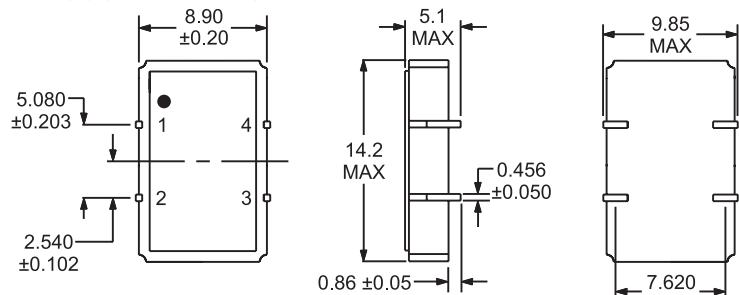
Blank=Tubes
 TR=Tape and Reel (Standard)

FREQUENCY

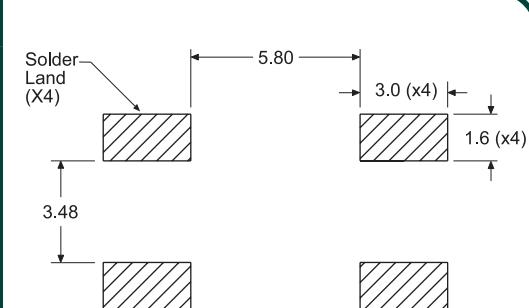
LOGIC CONTROL/ADDITIONAL OUTPUT

A=No Connect
 B=Enable/Disable
 C=Complementary Output

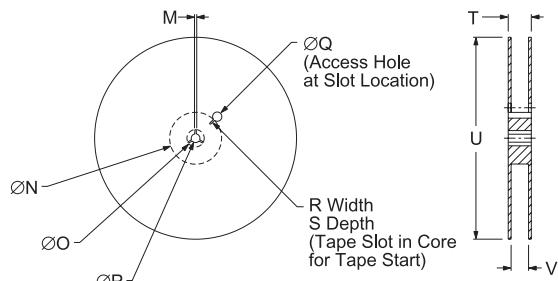
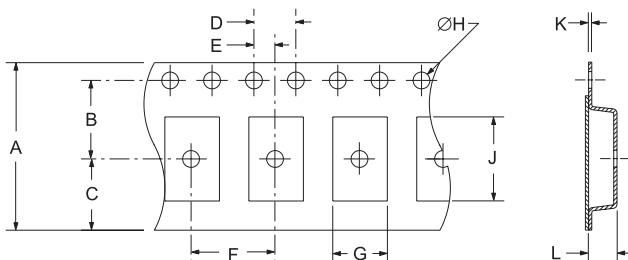
MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24 ±.3	11.5 ±.1	10.75 ±.1	4 ±.2	2 ±.1
G	12 ±.1	80*	1.5 ±.1-0	A0*	.4 ±.05
H					K0*

REEL	M	N	O	P	Q
R	1.5 MIN	50 MIN	20.2 MIN	13 ±.2	40 MIN
S	2.5 MIN	10 MIN	30.4 MAX	360 MAX	24.4+2.0
T				V	1000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

Specification

Seal Integrity Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds

Solderability 563 solder dip at +130°C ±5°C for 5 seconds /95% coverage.

Marking Permanency 1 Stroke with brush after 1 minute soak in solvent 3 times.

Shock of 20cm.

Vibration Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E11C1

PACKAGE
CERAMIC

VOLTAGE
5.0V

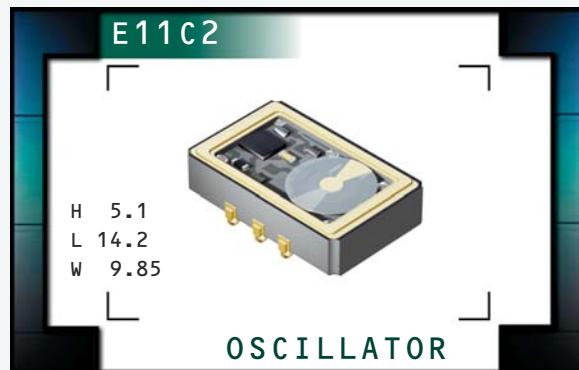
CLASS
0565

REV. DATE
10/02

OBSOLETE

E11C2 Series

- PECL Output Oscillators
- 5.0V supply voltage
- 6 pad ceramic SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



NOTES

OBSOLETE

ELECTRICAL SPECIFICATIONS

Frequency Range	19.440MHz to 212.500MHz					
Operating Temperature Range	0°C to 70°C or -40°C to 85°C					
Storage Temperature Range	-55°C to 125°C					
Supply Voltage (V_{cc})	5.0V _{DC} ±5%					
Input Current	100mA Maximum					
Logic Type	100KH					
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum				
Output Voltage Logic High (V_{OH})	V_{cc} -1.025V _{DC} Minimum					
Output Voltage Logic Low (V_{OL})	V_{cc} -1.620V _{DC} Maximum					
Rise Time / Fall Time	20% to 80% of waveform	2 nSeconds Maximum				
Duty Cycle	at 50% of waveform	50 ±10(%) 50 ±5(%)				
Load Drive Capability	50 Ohms into V_{cc} -2.0V _{DC}					
Logic Control / Additional Output	No Connect, Enable/Disable, Complementary Output, or Complementary Output and Enable/Disable					
Enable/Disable Input Voltage	V_{IL} of V_{cc} -1.475V _{DC} Maximum No Connection V_{IH} of V_{cc} -1.165V _{DC} Minimum	Enables Output Enables Output Disables Output: Logic Low Disables Complementary Output: Logic High				
Start Up Time	10 mSeconds Maximum					
RMS Phase Jitter	FJ = 12kHz to 20MHz	1 pSec Maximum				
MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	E11C2	CERAMIC	5.0V	0566	10/02

PART NUMBERING GUIDE

E11C2 F 2 C - 155.520M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

C=±100ppm Maximum over 0°C to +70°C
 D=±50ppm Maximum over 0°C to +70°C
 E=±25ppm Maximum over 0°C to +70°C
 F=±20ppm Maximum over 0°C to +70°C
 G=±100ppm Maximum over -40°C to +85°C
 H=±50ppm Maximum over -40°C to +85°C

DUTY CYCLE

1=50% ±10%, 2=50% ±5%

AVAILABLE OPTIONS

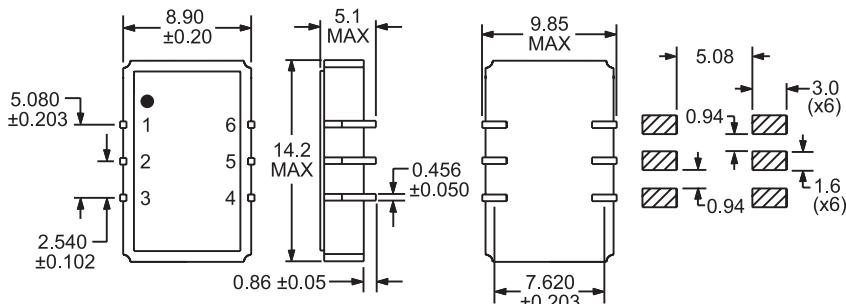
Blank=Tubes
 TR=Tape and Reel (Standard)

FREQUENCY

LOGIC CONTROL/ADDITIONAL OUTPUT

A=No Connect	D=Complementary Output and Enable/Disable
B=Enable/Disable	E=Complementary Output (Alt. Pin Configuration)
C=Complementary Output	G=Complementary Output and Enable/Disable (Alt. Pin Configuration)

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



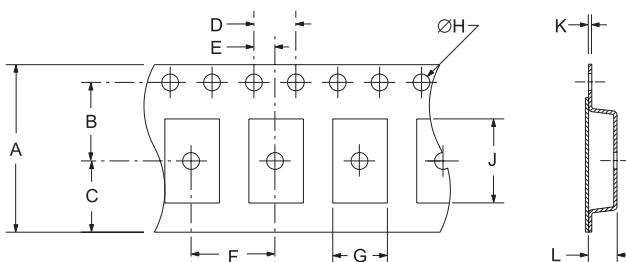
PIN CONNECTIONS TABLE

Logic Control/Additional Output Option						
PIN	A	B	C	D	E	G
1	N/C	N/C	Q'	Q'	N/C	N/C
2	N/C	E/D	N/C	E/D	N/C	E/D
3	GND	GND	GND	GND	GND	GND
4	Q	Q	Q	Q	Q	Q
5	N/C	N/C	N/C	N/C	Q'	Q'
6	Vdd	Vdd	Vdd	Vdd	Vdd	Vdd

N/C = No Connect
 GND = Case Ground
 Q = Output

Q' = Complementary Output
 E/D = Enable/Disable
 Vdd = Supply Voltage

TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24 ±.3	11.5 ±.1	10.75 ±.1	4 ±.2	2 ±.1
G	12 ±.1	B0*	1.5 ±.1-0	A0*	.4 ±.05

REEL	M	N	O	P	Q
R	1.5 MIN 2.5 MIN	50 MIN 10 MIN	20.2 MIN 30.4 MAX	13 ±.2 360 MAX	40 MIN 24.4+2-0 QTY/REEL 1000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

Specification

Seal Integrity Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum (internal crystallinity).

Solderability Sn63 Solder dip at +230°C ±5°C for 5 seconds 95% coverage.

Shock

Random drop on hard wooden plate 3 times from a height of 20cm.

Vibration

Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E11C2

PACKAGE
CERAMIC

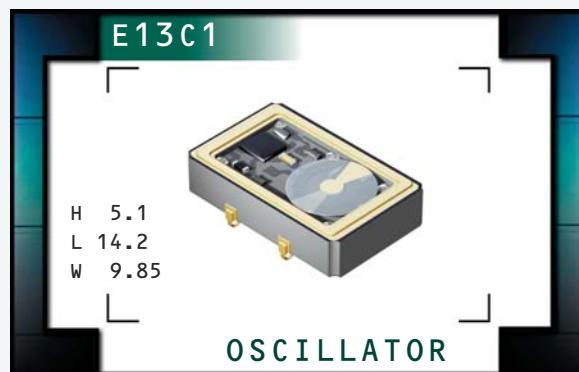
VOLTAGE
5.0V

CLASS
0566

REV. DATE
10/02

E13C1 Series

- PECL Output Oscillators
- 3.3V supply voltage
- 4 pad ceramic SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



NOTES

OBSOLETE

ELECTRICAL SPECIFICATIONS

Frequency Range	19.440MHz to 212.500MHz					
Operating Temperature Range	0°C to 70°C or -40°C to 85°C					
Storage Temperature Range	-55°C to 125°C					
Supply Voltage (V_{cc})	3.3V _{DC} ±5%					
Input Current	75mA Maximum					
Logic Type	100KH					
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum				
Output Voltage Logic High (V_{OH})	V_{cc} -1.025V _{DC} Minimum					
Output Voltage Logic Low (V_{OL})	V_{cc} -1.620V _{DC} Maximum					
Rise Time / Fall Time	20% to 80% of waveform	2 nSeconds Maximum				
Duty Cycle	at 50% of waveform	50 ±10(%) 50 ±5(%)				
Load Drive Capability	50 Ohms into V_{cc} -2.0V _{DC}					
Logic Control / Additional Output	No Connect, Enable/Disable, or Complementary Output					
Enable/Disable Input Voltage	V_{IL} of V_{cc} -1.475V _{DC} Maximum No Connection V_{IH} of V_{cc} -1.165V _{DC} Minimum	Enables Output Enables Output Disable Output: Logic Low Disables Complementary Output: Logic High				
Start Up Time	10 mSeconds Maximum					
RMS Phase Jitter	FJ = 12kHz to 20MHz	1 pSec Maximum				
MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	E13C1	CERAMIC	3.3V	0563	10/02

PART NUMBERING GUIDE

E13C1 F 2 C - 155.520M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

C=±100ppm Maximum over 0°C to +70°C
 D=±50ppm Maximum over 0°C to +70°C
 E=±25ppm Maximum over 0°C to +70°C
 F=±20ppm Maximum over 0°C to +70°C
 G=±100ppm Maximum over -40°C to +85°C
 H=±50ppm Maximum over -40°C to +85°C

DUTY CYCLE

1=50% ±10%, 2=50% ±5%

AVAILABLE OPTIONS

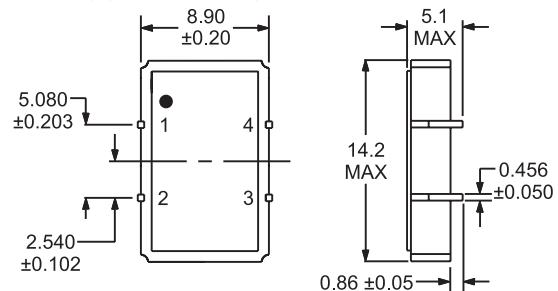
Blank=Tubes
 TR=Tape and Reel (Standard)

FREQUENCY

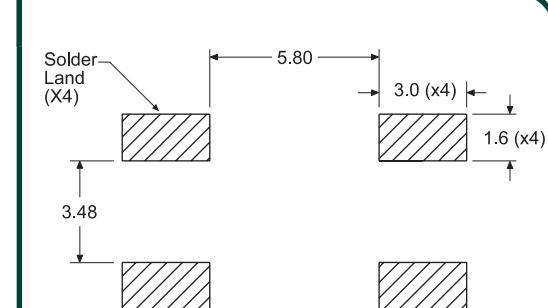
LOGIC CONTROL/ADDITIONAL OUTPUT

A=No Connect
 B=Enable/Disable
 C=Complementary Output

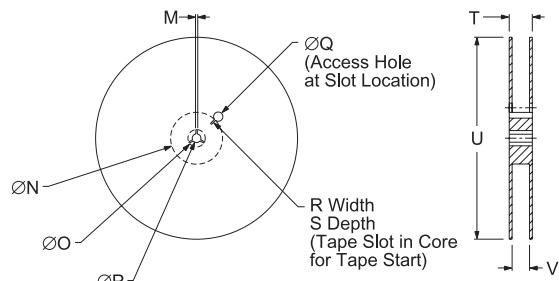
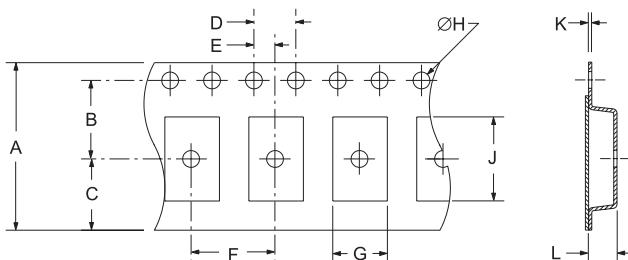
MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24 ±.3	11.5 ±.1	10.75 ±.1	4 ±.2	2 ±.1
G	12 ±.1	80*	1.5 ±.1-0	AO*	.4 ±.05
H					K0*

REEL	M	N	O	P	Q
R	1.5 MIN	50 MIN	20.2 MIN	13 ±.2	40 MIN
S	2.5 MIN	10 MIN	30.4 MAX	360 MAX	24.4+2.0
T				V	1000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

OBsolete
 Seal Integrity: Bubble test in perf vapor chamber at +125°C ±5° for 60 seconds minimum (internal crystal only)
 Solderability: Sn63 Solder dip at +230°C ±5°C for 5 seconds/95% coverage.

Marking Permanency: 10 Strokes with brush after 1 minute soak in solvent, 3 times.

Shock: Random drop on hard wooden plate 3 times from a height of 20cm.

Vibration: Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E13C1

PACKAGE
CERAMIC

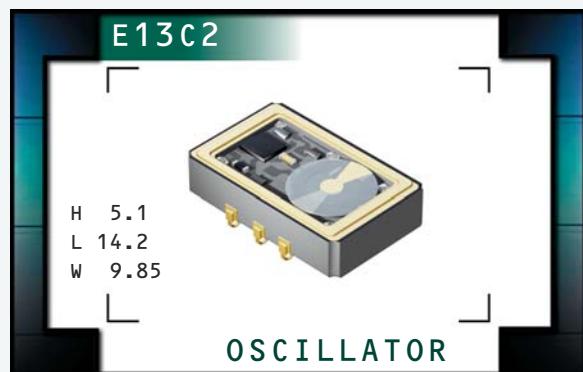
VOLTAGE
3.3V

CLASS
0563

REV. DATE
10/02

E13C2 Series

- PECL Output Oscillators
- 3.3V supply voltage
- 6 pad ceramic SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



NOTES

OBSOLETE

ELECTRICAL SPECIFICATIONS

Frequency Range	19.440MHz to 212.500MHz	
Operating Temperature Range	0°C to 70°C or -40°C to 85°C	
Storage Temperature Range	-55°C to 125°C	
Supply Voltage (V_{cc})	3.3V _{DC} ±5%	
Input Current	75mA Maximum	
Logic Type	100KH	
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum
Output Voltage Logic High (V_{OH})	V_{cc} -1.025V _{DC} Minimum	
Output Voltage Logic Low (V_{OL})	V_{cc} -1.620V _{DC} Maximum	
Rise Time / Fall Time	20% to 80% of waveform	
Duty Cycle	at 50% of waveform	50 ±10(%) 50 ±5(%)
Load Drive Capability	50 Ohms into V_{cc} -2.0V _{DC}	
Logic Control / Additional Output	No Connect, Enable/Disable, Complementary Output, or Complementary Output and Enable/Disable	
Enable/Disable Input Voltage	V_{IL} of V_{cc} -1.475V _{DC} Maximum No Connection V_{IH} of V_{cc} -1.165V _{DC} Minimum	Enables Output Enables Output Disables Output: Logic Low Disables Complementary Output: Logic High
Start Up Time	10 mSeconds Maximum	
RMS Phase Jitter	$F_J = 12\text{kHz}$ to 20MHz	1 pSec Maximum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E13C2	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS 0564	REV. DATE 10/02

PART NUMBERING GUIDE

E13C2 F 2 C - 155.520M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

C=±100ppm Maximum over 0°C to +70°C
 D=±50ppm Maximum over 0°C to +70°C
 E=±25ppm Maximum over 0°C to +70°C
 F=±20ppm Maximum over 0°C to +70°C
 G=±100ppm Maximum over -40°C to +85°C
 H=±50ppm Maximum over -40°C to +85°C

DUTY CYCLE

1=50% ±10%, 2=50% ±5%

AVAILABLE OPTIONS

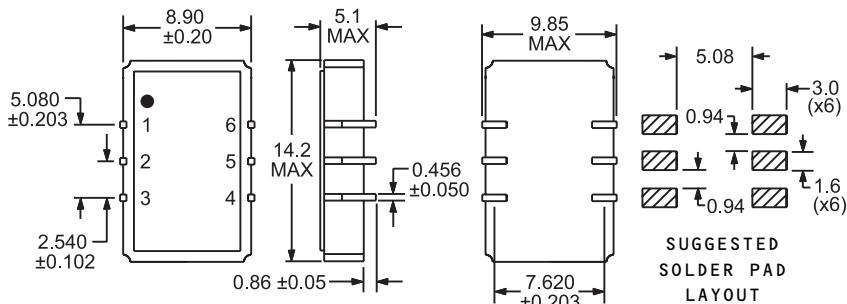
Blank=Tubes
 TR=Tape and Reel (Standard)

FREQUENCY

LOGIC CONTROL/ADDITIONAL OUTPUT

A=No Connect	D=Complementary Output and Enable/Disable
B=Enable/Disable	E=Complementary Output (Alt. Pin Configuration)
C=Complementary Output	G=Complementary Output and Enable/Disable (Alt. Pin Configuration)

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



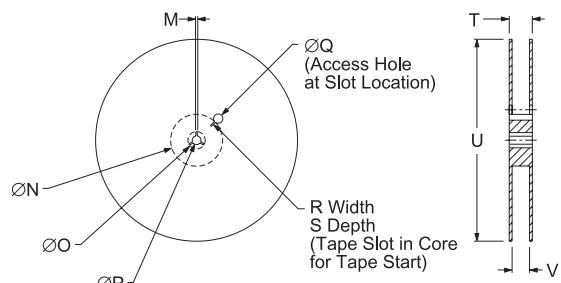
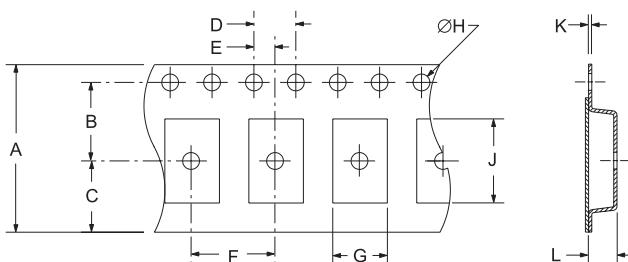
PIN CONNECTIONS TABLE

Logic Control/Additional Output Option						
PIN	A	B	C	D	E	G
1	N/C	N/C	Q'	Q'	N/C	N/C
2	N/C	E/D	N/C	E/D	N/C	E/D
3	GND	GND	GND	GND	GND	GND
4	Q	Q	Q	Q	Q	Q
5	N/C	N/C	N/C	N/C	Q'	Q'
6	Vdd	Vdd	Vdd	Vdd	Vdd	Vdd

N/C = No Connect
 GND = Case Ground
 Q = Output

Q' = Complementary Output
 E/D = Enable/Disable
 Vdd = Supply Voltage

TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24 ±.3	11.5 ±.1	10.75 ±.1	4 ±.2	2 ±.1
G	12 ±.1	B0*	1.5 ±.1-0	A0*	.4 ±.05
H					K0*

REEL	M	N	O	P	Q
R	1.5 MIN 2.5 MIN	50 MIN 10 MIN	20.2 MIN 30.4 MAX	13 ±.2 360 MAX	40 MIN 24.4+2-0 QTY/REEL 1000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

Specification

Seal Integrity	Bubble test in Perfluorocarbon at 112.5°C ±5°C for 30 seconds minimum (internal crystal only).
Solderability	Snow Solder Dip at +230°C / 5°C for 5 seconds/ 5% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E13C2

PACKAGE
CERAMIC

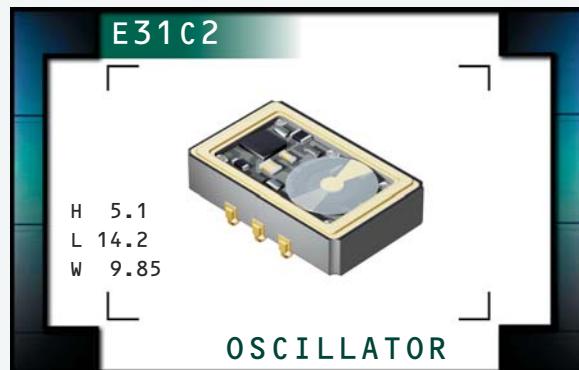
VOLTAGE
3.3V

CLASS
0564

REV. DATE
10/02

E31C2 Series

- PECL Output VCXO
- 5.0V supply voltage
- 6 pad ceramic SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



ELECTRICAL SPECIFICATIONS

Frequency Range	19.440MHz to 83.333MHz				
Operating Temperature Range	0°C to 70°C or -40°C to 85°C				
Storage Temperature Range	-55°C to 125°C				
Supply Voltage (V_{cc})	$5.0V_{DC} \pm 5\%$				
Input Current	100mA Maximum				
Logic Type	100KH				
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	$\pm 50ppm, \pm 25ppm, or \pm 20ppm$ Maximum			
Output Voltage Logic High (V_{OH})	$V_{cc}-1.025V_{DC}$ Minimum				
Output Voltage Logic Low (V_{OL})	$V_{cc}-1.620V_{DC}$ Maximum				
Rise Time / Fall Time	20% to 80% of waveform	2 nSeconds Maximum			
Duty Cycle	at 50% of waveform	$50 \pm 10\%$ (%) $50 \pm 5\%$ (%)			
Load Drive Capability	50 Ohms into $V_{cc}-2.0V_{DC}$				
Additional Output / Logic Control	No Connect and Single Output Enable/Disable and Single Output No Connect and Complementary Output or Enable/Disable and Complementary Output				
Enable/Disable Input Voltage	V_{IL} of $V_{cc}-1.475V_{DC}$ Maximum No Connection V_{IH} of $V_{cc}-1.165V_{DC}$ Minimum	Enables Output Enables Output Disables Output: Logic Low Disables Complementary Output: Logic High			
Start Up Time	10 mSeconds Maximum				
RMS Phase Jitter	FJ = 12kHz to 20MHz 1 pSec Maximum				
Absolute Pull Range (APR)	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	$\pm 50ppm$ Minimum			
Linearity	20%, 15%, or 10% Maximum				
Control Voltage (V_c): Test Conditions for APR	$2.5V_{DC} \pm 2.0V_{DC}$				
Control Voltage Range (V_{cr})	$0.0V_{DC}$ to V_{cc}				
Center Control Voltage	$2.5V_{DC}$				
Transfer Function	Positive Transfer Characteristic				
Input Impedance	50kOhms Typical				
Modulation Bandwidth	at -3dB with Control Voltage of $+2.5V_{DC}$	10kHz Minimum			

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E31C2

PACKAGE
CERAMIC

VOLTAGE
5.0V

CLASS
0568

REV. DATE
10/02

PART NUMBERING GUIDE

E31C2 F 3 A 2 C - 77.760M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

D=±50ppm Maximum over 0°C to +70°C
E=±25ppm Maximum over 0°C to +70°C
F=±20ppm Maximum over 0°C to +70°C
H=±50ppm Maximum over -40°C to +85°C

APR

3=±50ppm Minimum

LINEARITY

A=20%
B=15%
C=10%

AVAILABLE OPTIONS

Blank=Tubes
TR = Tape and Reel (Standard)

FREQUENCY

ADDITIONAL OUTPUT/LOGIC CONTROL

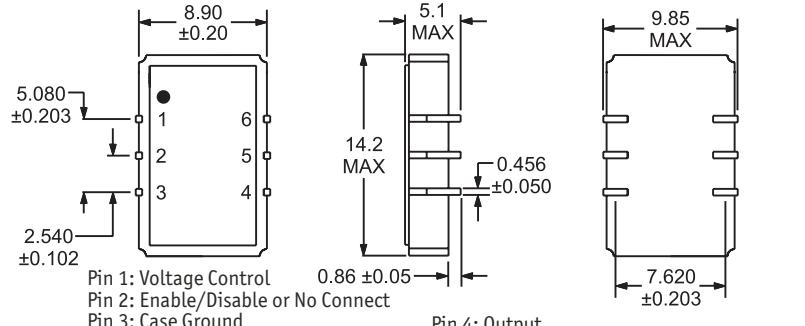
A=No Connect and Single Output
B=Enable/Disable and Single Output
C=No Connect and Complementary Output
D=Enable/Disable and Complementary Output

DUTY CYCLE

1=50±10%, 2=50±5%

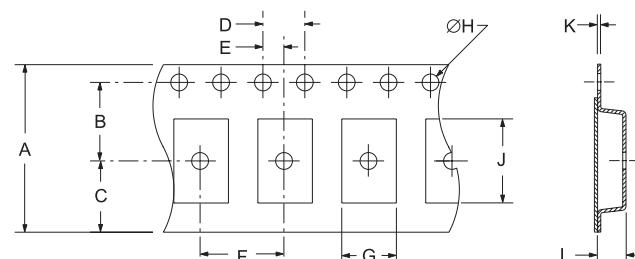
MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS

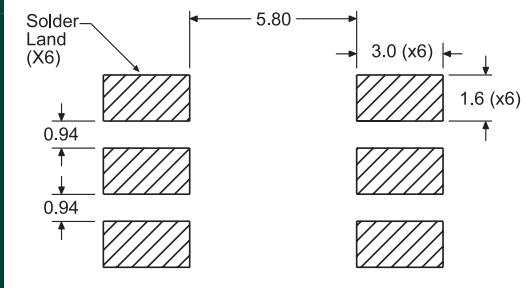
ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24 ±.3	11.5 ±.1	10.75 ±.1	4 ±.2	2 ±.1
G	12 ±.1	B0*	1.5 ±.1-0	A0*	.4 ±.05
H					K0*

SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS



ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

Characteristic	Specification
Capacitance	0.1 pF typical at 1000Hz, 2000pF maximum (internal crystal only).
Solderability	5-63 Solder dip at +30°C ± 5°C for 5 seconds, 5% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 5 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E31C2

PACKAGE
CERAMIC

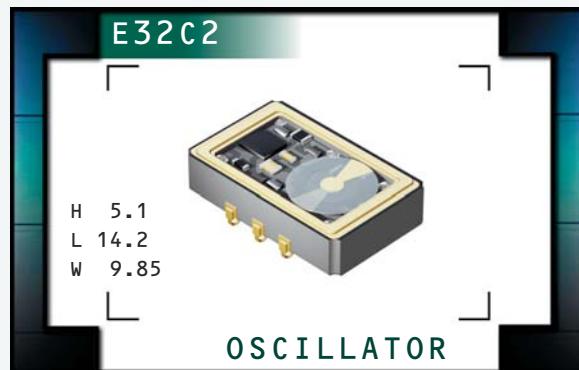
VOLTAGE
5.0V

CLASS
0568

REV. DATE
10/02

E32C2 Series

- PECL Output VCXO
- 3.3V supply voltage
- 6 pad ceramic SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



ELECTRICAL SPECIFICATIONS

Frequency Range	19.440MHz to 83.333MHz		
Operating Temperature Range	0°C to 70°C or -40°C to 85°C		
Storage Temperature Range	-55°C to 125°C		
Supply Voltage (V_{cc})	$3.3V_{DC} \pm 5\%$		
Input Current	75mA Maximum		
Logic Type	100KH		
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years ±50ppm, ±25ppm, or ±20ppm Maximum		
Output Voltage Logic High (V_{OH})	$V_{CC}-1.025V_{DC}$ Minimum		
Output Voltage Logic Low (V_{OL})	$V_{CC}-1.620V_{DC}$ Maximum		
Rise Time / Fall Time	20% to 80% of waveform 2 nSeconds Maximum		
Duty Cycle	at 50% of waveform 50 ±10(%) 50 ±5(%)		
Load Drive Capability	50 Ohms into $V_{CC}-2.0V_{DC}$		
Additional Output / Logic Control	No Connect and Single Output Enable/Disable and Single Output No Connect and Complementary Output or Enable/Disable and Complementary Output		
Enable/Disable Input Voltage	V_{IL} of $V_{CC}-1.475V_{DC}$ Maximum No Connection V_{IH} of $V_{CC}-1.165V_{DC}$ Minimum Enables Output Enables Output Disables Output: Logic Low Disables Complementary Output: Logic High		
Start Up Time	10 mSeconds Maximum		
RMS Phase Jitter	$FJ = 12kHz$ to 20MHz 1 pSec Maximum		
Absolute Pull Range (APR)	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years ±50ppm Minimum		
Linearity	20%, 15%, or 10% Maximum		
Control Voltage (V_c): Test Conditions for APR	$1.65V_{DC} \pm 1.35V_{DC}$		
Control Voltage Range (V_{CR})	$0.0V_{DC}$ to V_{CC}		
Center Control Voltage	$1.65V_{DC}$		
Transfer Function	Positive Transfer Characteristic		
Input Impedance	50kOhms Typical		
Modulation Bandwidth	at -3dB with Control Voltage of $+1.65V_{DC}$ 10kHz Minimum		

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E32C2

PACKAGE
CERAMIC

VOLTAGE
3.3V

CLASS
0567

REV. DATE
10/02

PART NUMBERING GUIDE

E32C2 F 3 A 2 C - 77.760M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

D=±50ppm Maximum over 0°C to +70°C
E=±25ppm Maximum over 0°C to +70°C
F=±20ppm Maximum over 0°C to +70°C
H=±50ppm Maximum over -40°C to +85°C

APR

3=±50ppm Minimum

LINEARITY

A=20%
B=15%
C=10%

AVAILABLE OPTIONS

Blank=Tubes
TR = Tape and Reel (Standard)

FREQUENCY

ADDITIONAL OUTPUT/LOGIC CONTROL

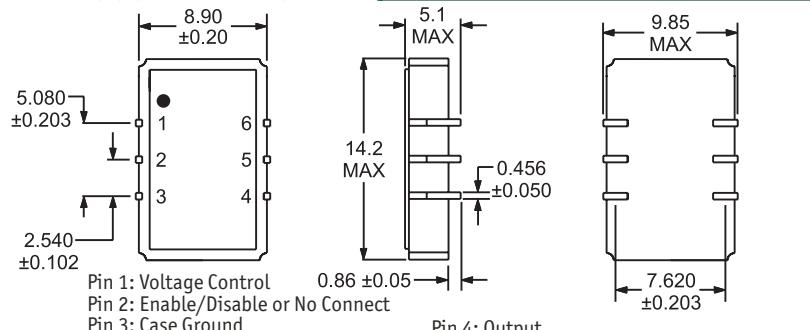
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B=Enable/Disable and Single Output
C=No Connect and Complementary Output
D=Enable/Disable and Complementary Output

DUTY CYCLE

1=50±10%, 2=50±5%

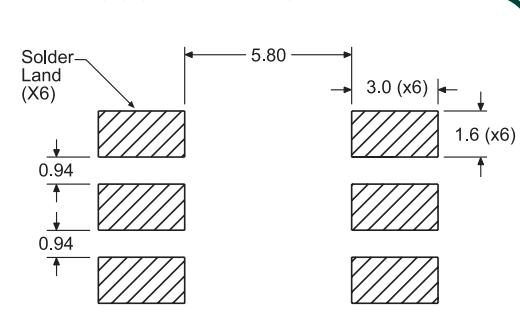
MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



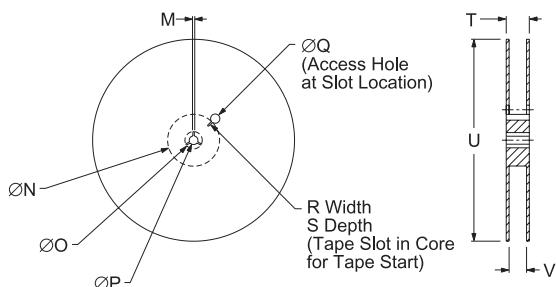
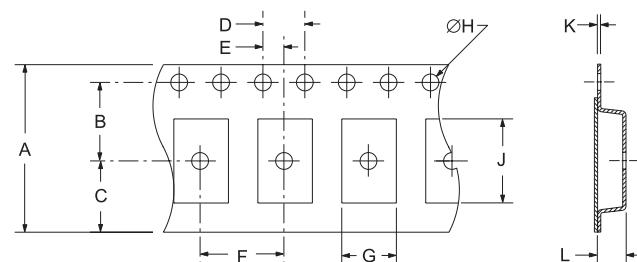
SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
F	24 ±.3	11.5 ±.1	10.75 ±.1	4 ±.2	2 ±.1
G	12 ±.1	B0*	1.5 ±.1-0	A0*	.4 ±.05
H					K0*

REEL	M	N	O	P	Q
R	1.5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN
S	2.5 MIN	10 MIN	30.4 MAX	360 MAX	24.4+2-0
U				V	1000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum (internal crystal only)
Solderability	SJ-63 Solder dip at +130°C ±5°C for 5 seconds/95% coverage.
Marking Durability	10 strokes with brush. After 1 minute, no visible change. 2 times.
Shock	Random drop on hard wooden plate 3 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
E32C2

PACKAGE
CERAMIC

VOLTAGE
3.3V

CLASS
0567

REV. DATE
10/02